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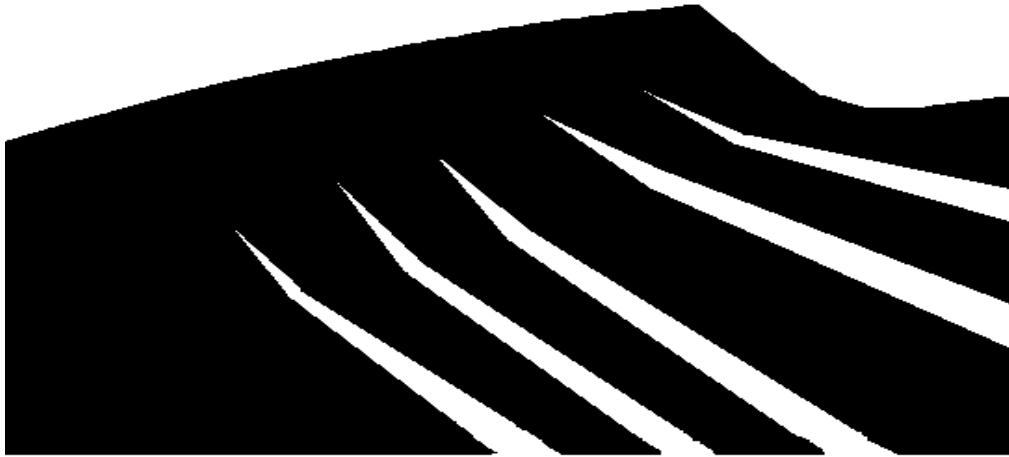
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LANL-CST-DP-60, R5

Page 1 of 6

PREPARATION OF NTS SAMPLES FOR LANL YMP SOLID CORE EXPERIMENTS

LOS ALAMOS QUALITY PROGRAM



APPROVAL FOR RELEASE

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Los Alamos
Yucca Mountain Site
Characterization Project

HISTORY OF REVISION

REVISION NO.	EFFECTIVE DATE	PAGES REVISED	REASON FOR CHANGE
R0	01/08/87	N/A	Initial procedure.
R1	03/31/87	N/A	History of revisions not started until Revision 3.
R2	03/13/89	N/A	History of revisions not started until Revision 3.
R3	08/13/92	All	Complete rewrite. Revision R2 of this procedure was previously identified as
R4	08/08/94	All	Reformatted to conform to LANL-YMP-QP-6.3, R1.
R5	12/23/96	All	Revised to comply with LANL-YMP-QP-06.3 requirements.

Los AlamosYucca Mountain Site
Characterization Project

PREPARATION OF NTS SAMPLES FOR LANL YMP SOLID CORE EXPERIMENTS

1.0 PURPOSE

This detailed technical procedure (DP) describes the preparation of the core and intact tuff samples used for individual Los Alamos National Laboratory (LANL) Yucca Mountain Site Characterization Project (YMP) solid core experiments.

2.0 SCOPE

This procedure applies to the preparation of samples for solid core experiments within the YMP.

3.0 REFERENCES

LANL-YMP-QP-02.7, Personnel Training
LANL-YMP-QP-03.5, Documenting Scientific Investigations
LANL-YMP-QP-08.1, Identification and Control of Samples
LANL-YMP-QP-12.3, Control of Measuring and Test Equipment and Standards
LANL-YMP-QP-17.6, Records Management
Standard Operating Procedure (SOP) for Rock Coring Machine
Standard Operating Procedure (SOP) for Rock Wire Saw
Standard Operating Procedure (SOP) for Slab Rock Saw

4.0 DEFINITIONS

4.1 Manipulation of the Sample

Manipulation of the sample refers to the following: sawing, recoring, machining, sanding, or polishing.

5.0 RESPONSIBILITIES

- Principal Investigator (PI)
- Users

6.0 PROCEDURE

The use of this procedure must be controlled as follows:

- If this procedure cannot be implemented as written, YMP personnel should notify appropriate supervision. If it is determined that a portion of the work cannot be accomplished as described in this QP, or would result in an undesirable situation,

that portion of the work will be stopped and not resumed until this procedure is modified, replaced by a new document or current work practice is documented in accordance with QP-03.5, subsection 6.1.6.

- Employees may use copies of this procedure printed from the controlled document electronic file; however, employees are responsible for assuring that the correct revision of this procedure is used.
- When this procedure becomes obsolete or superseded, it must be destroyed or marked “superseded” to ensure that this document is not used to perform work.

6.1 Principle

This procedure describes the manipulation of samples for solid core experiments and the documentation required.

6.2 Equipment and Hardware/Software

Equipment needed to prepare samples is listed below. Items equivalent to those listed below may be used provided they perform the same function with an acceptable level of performance as judged by the user or the PI.

- saw
- drill press
- lathe
- milling machine
- rock polisher
- measurement tools: micrometer, caliper, ruler
- balances

6.2.1 Equipment Malfunctions

Equipment malfunctions are apparent to the operator and the manipulation procedure will be halted until the equipment is repaired.

6.2.2 Safety Considerations

Ensure compliance with CST Division Environmental Safety and Health Operational Policy Statement.

Read: Standard Operating Procedure (SOP) for Rock Coring Machine

Read: Standard Operating Procedure (SOP) for Rock Wire Saw

Read: Standard Operating Procedure (SOP) for Slab Rock Saw

6.2.3 Special Handling

There are no special handling requirements.

6.3 Preparatory Verification

6.3.1 Hold Points

There are no hold points for this procedure.

6.3.2 Calibration

Balances used for weighing are controlled pursuant to LANL-YMP-QP-12.3. When data are collected from a balance, the unique identifier number of that balance must be recorded in the user's laboratory notebook along with the data collected. Micrometers and calipers are not calibrated because they are used as a convenience. Ruler accuracy is adequate.

6.3.3 Environmental Conditions

No special environmental conditions are required for this DP. If any special conditions are used, they will be recorded according to Section 6.7 of this DP.

6.4 Control of Samples

All samples will be controlled according to LANL-YMP-QP-08.1, Identification and Control of Samples. The unique identifier from the original sample is used; if more than one piece is used from the same tuff or core sample, an additional alphanumeric character is added to maintain uniqueness.

6.5 Implementing Procedure

6.5.1 Preparation of Samples

6.5.1.1 The measurement specifications for the core will be determined according to drawings or verbal descriptions agreed upon by the investigator and the technician performing the manipulation.

6.5.1.2 Manipulate the core or the intact tuff samples for the type of experiment to be run (e.g. solid rock columns, beakers, wafers, and diffusion cells) by slab sawing, recoring, boring, and polishing the sample utilizing the tools specified in Section 6.2.

6.5.2 Ensure that the following data are recorded in notebook:

- Unique identifier for sample(s) manipulated (SMF ID#, drill hole, number and footage, or area at which sample was collected).
- Dimensions and weight of the manipulated core sample.
- Lubricant (usually deionized water) used for the manipulation.
- Name of person performing manipulation and date.
- Procedure and revision number.
- Any applicable drawings or pictures

6.6 Data Acquisition and Reduction

The active recording of data as specified above will constitute the data acquisition. Computer programs such as word processing editors and spreadsheets will be used for recording and formatting data but are not part of the data acceptance criteria. Users should verify that the data has been recorded properly.

6.7 Potential Sources of Error and Uncertainty

Deviations are not permitted. If during the manipulation of the sample it should break, additional core must be obtained and the process restarted.

7.0 RECORDS

Records generated as a result of this DP are entries in laboratory notebooks or attachments to laboratory notebooks. The documentation should consist of any applicable items identified in Section 6.0 of this procedure. Laboratory notebooks should be kept in accordance with QP-03.5.

All records should be submitted to the Records Processing Center in accordance with QP-17.6.

8.0 ACCEPTANCE CRITERIA

Proper recording of the data specified in Section 6.5.2 constitute the acceptance criteria for this DP.

9.0 TRAINING

The PI or his designee will train the investigator assigned to use this DP. The investigator assigned to this work will be qualified through formal training by observation and evaluation as he follows this DP. Training is documented according to LANL-YMP-QP-02.7.

10.0 ATTACHMENTS

N/A